

USSR

UDC 547.242+546.19:546.221

KAMAY, G. Kh. (Deceased), CHERNOKAL'SKIY, B. D., and LIVENSHTEYN, I. B.,
Kazan Institute of Chemical Technology imeni S. M. Kirov

"Feasible Mechanism for the Reaction of Tertiary Arsine Sulfides With
Alkyl Halides"

Leningrad, Zhurnal Obshchey Khimii, Sep 71, Vol 41, No 9, pp 2015-2020

Abstract: The purpose of this study was the synthesis of alkylarsonium salts and other products of the reaction $R_3AsS + AlkI \rightarrow [R_3AsAlk]I$. It is shown that the formation of quaternary arsonium salts by the reaction of tertiary arsine sulfides with alkyl halides is common for both triaryl- and trialkyl arsine sulfides. The other reaction products, in addition to tertiary arsines and arsonium salts, include dialkyl disulfides and trialkylsulfonium halides. The conversion of alkylthioarsonium to tertiary arsine is effected by the halogen anion. The mechanism of the reaction is discussed.

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USSR

UDC 547.26'118

TSIVUNIN, V. S., KRUTSKIY, L. N., ERNAZAROV, and KANAY, G. Kh.

"The Reaction of Diethylamidoethylphosphonous Acid Chlorides and Ethyldichlorophosphine, With the Orthoformic Ester and Acetic Aldehyde Diethyl Acetal"

Leningrad, Zhurnal Obshchey Khimii, Vol XL, No 12, Dec 70, pp 2560-2563

Abstract: For a comparison of the electrophilic properties of the diethylamidoethylphosphonous acid chloride and those of the halides of trivalent phosphorus, the authors studied the above reaction.

It was found that ethyldichlorophosphine reacts vigorously with the orthoformic ester, to form the ethyl ester of ethyldiethoxymethylphosphinic acid, and with the diethyl acetal of acetaldehyde to form (depending on the ratio of reagents) the ethyl ester or the acid chloride of ethyl-1-ethoxyethylphosphinic acid. Alcohols react with the latter to produce the esters of ethyl-1-ethoxyethylphosphinic acid, and also the acid itself. It was also found that the diethylamidoethylphosphinic acid chloride, as distinct from ethyldichlorophosphine, reacts with the orthoformic ester, but is practically inactive with respect to the diacetal of acetaldehyde.

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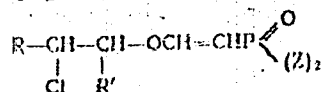
UDC: 547.341.26'118.07

FRIDLAND, S. V., CHIRKUNOVA, S. K., KAMAY, G. Kh., Kazan' Institute of Chemical Technology imeni S. M. Kirov

"A Method of Synthesizing β -(β -Chloralkoxy)vinylphosphonic Acid Derivatives"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 15, May 71, Author's Certificate No 302344, Division C, filed 6 Jan 70, published 28 Apr 71, p 80

Translation: This Author's Certificate introduces: 1. A method of synthesizing β -(β -chloralkoxy)vinylphosphonic acid derivatives of the general formula



where Z is chlorine, OR''; R and R' are hydrogen, alkyl. As a distinguishing feature of the patent, substituted 2-methyl-1,3-dihydroxycyclopentane reacts with phosphorus pentachloride in an organic solvent such as benzene, followed by sulfur dioxide treatment of the resultant product and isolation of the final product or conversion to the corresponding ester by conventional methods. 2. A modification of this method distinguished by the fact that the phosphorus 1/2

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FRIDLAND, S. V., et al., Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 15, May 71,

pentachloride and substituted 2-methyl-1,3-dihydroxycyclopentane are taken in a ratio of 3:1, respectively. 3. A modification of this method distinguished by the fact that the process is carried out at 5-10°C with subsequent temperature increase to 30°C.

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USSR

UDC 547.341

FRIDLAND, S. V., CHIRKUNOVA, S. K., KATAYEVA, V. A., and KAMAY, G. Kh.,
(Deceased), Kazan' Chemical-Technological Institute imeni S. M. Kirov

"Reaction of Phosphorus Pentachloride With 2-Methyl-1,3-dioxocyclopentanes-1"

Leningrad, Zhurnal Obshchey Khimii, Vol 41 (103), No 3, Mar 71, pp 554-556

Abstract: Reaction of phosphorus pentachloride with 2-methyl-1,3-dioxocyclopentanes takes place with a break in the cyclopentyl ring to give dichloroanhydrides of β -(β -chloroalkoxy)vinylphosphonic acids. 200 g of phosphorus pentachloride was added in portions to 28 g ethyleneacetal in 150 ml absolute benzene with vigorous stirring, keeping the reaction temperature at 5°. Then the mixture was heated for one hour at 30°. The complex formed was decomposed after 12 hours with sulfur dioxide to give 40% of the dichloroanhydride of β -(β -chloroethoxy)vinylphosphonic acid, b.p. 141-142°/5 mm, d_4^{20} 1.4868, n_D^{20} 1.522. The dichlorides obtained react with secondary amines, alkaline alcohols, and alkoxides to yield corresponding amides and esters.

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UDC 542.945+542.957.2+547.852.7

GAVRILOV, V. I., CHERNOKAL'SKIY, B. D., and KAMAY, G. Kh., (deceased), Kazen' Chemical-Technological Institute imeni S. M. Kirov

"Arsenic-Carbon Bond Break in Derivatives of 5,10-Dihydrophenarsazine During Reactions With Hydroiodic Acid"

Leningrad, Zhurnal Obshchey Khimii, Vol 41 (103), No 3, Mar 71, pp 560-564

Abstract: Reaction of 10-alkyl-5,10-dihydrophenarsazine oxides with hydroiodic acid leads to a bond break between arsenic and carbon atom yielding 10-iodo-5,10-dihydrophenarsazine. Hydroiodic acid also breaks down 10-isopropyl-5,10-dihydrophenarsazine oxide yielding diphenylamine. On heating in benzene the diiodides of 10-alkyl(or aryl)-5,10-dihydrophenarsazines are converted to 10-iodo-5,10-dihydrophenarsazines. Reaction of ethyldibromoarsine with 10-ethyl-5,10-dihydrophenarsazine yields 10-bromo-5,10-dihydrophenarsazine.

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USSR

UDC 547.852.7+542.945+542.957.2

GAVRILOV, V. I., BATINA, L. A., CHERNOKAL'SKIY, B. D., and KAMAY, G. Kh.,
(deceased), Kazan' Chemical-Technological Institute imeni S. M. Kirov

"Reaction of Tertiary Arsine Oxide of the Dihydrophenarsazine Series With
Acids"

Leningrad, Zhurnal Obshchey Khimii, Vol 41 (103), No 3, Mar 71, pp 564-567

Abstract: It was determined that the hydrochloric, hydrobromic and trichloroacetic acids as well as pentachlorophenol form adducts with 10-alkyl-(aryl)-5,10-dihydrophenarsazine oxides (I) in aqueous alcohol medium or in benzene. To a heated ethanol solution of (I) the above reagents were added in 10 ml water; the solution was heated for 15 min, the volume was concentrated to 1/2-1/5 and cooled. A colorless crystalline product was obtained --- the adduct mentioned above ---, it was filtered, dried and recrystallized from ethanol. It was also shown that (I) could be titrated with HCl in a mixture of acetic acidacetic anhydride.

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UDC 547.242+546.19:546.221

CHERNOKAL'SKIY, B. D., LEVENSHTeyN, I. B., and KAMAY, G. Kh., (deceased)
Kazan' Chemical-Technological Institute imeni S. M. Kirov

"Synthesis of Alkylthioarsonium Salts"

Leningrad, Zhurnal Obshchey Khimii, Vol 41 (103), No 3, Mar 71, pp 557-559

Abstract: Reactions of triethyl- and tripropylarsine sulfides with alkyl halides were studied at room temperature either in benzene or in an excess of the alkylating reagent. Reactions lasted from 5.5 hrs to several days, yielding trialkylalkylthioarsonium salts -- hygroscopic crystalline compounds soluble in acetone and methylene chloride but insoluble in ether and benzene. Above sulfides as well as the triphenylarsine sulfide react with trialkyloxoniumtetrafluoroborates forming alkylthioarsonium salts.

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USSR

UDC 542.91+547.26'119+547.269.1

CHADAYEVA, N. A., KAMAY, G. KH. (deceased), and MAMAYEV, K. A.,
Institute of Organic and Physical Chemistry Imeni A. Ye. Arbuzov,
Academy of Sciences USSR

"Reaction of the Alkyl Esters of Pentavalent Arsenic Acids With
Mercaptans"

Moscow, Izvestiya Akademii Nauk, Seriya Khimicheskaya, No 7, Jul 70,
pp 1640-1642

Abstract: In contrast to the reaction of trivalent arsenic acid esters with various mercaptans, when the alkyl esters of pentavalent arsenic acid were reacted with mercaptans two processes took place: As (V) was reduced to As (III) and the alkoxy group was replaced by the thio group, forming respective thiocid esters of the trivalent arsenic. In some cases no pure product could be obtained due to the fact that on distillation azeotropic mixtures were being formed. The reaction was usually exothermic and consisted of mixing the reagents, removing the solvents and redistilling the product.

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UDJ 547.26.118

FRIDLAND, S. V., YAKIMOVA, T. YA., and KAMAY, G. Kh. (deceased), Department of Technology of Basic Organic and Petrochemical Synthesis, Kazan' Institute of Chemical Technology imeni S. M. Kirov.

"Study of the Reaction between Phosphorus Trichloride and o-Allyl-p-Cresol"

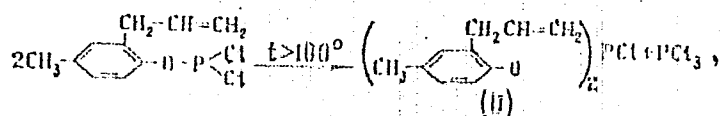
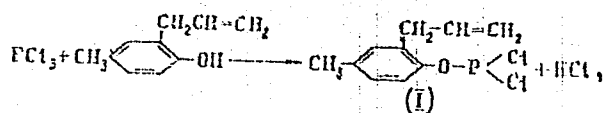
Ivanovo, Izvestiya Vysshikh Uchebnykh Zavedeniy, Khimiya i Khimicheskaya Tekhnologiya, vol. 13, no. 12, 70, pp 1760-1761

Abstract: The reaction of o-allyl-p-cresol with phosphorus trichloride has been studied. Fractionation of the reaction mass yielded, in analytically pure form, two fractions -- diacid chloride of o-allyl-p-cresylphosphorous acid (I) and the acid chloride of di(o-allyl-p-cresyl) phosphorous acid (II). The reaction was conducted in equimolar ratios and the formation of product II may be explained as the reaction of nucleophilic substitution of the second chlorine atom as well as by concurrent disproportionation. The obtained acid chlorides are colorless transparent slightly fuming (in open air) liquids with an odor peculiar to acid chlorides. The acid chlorides were esterified with alcohol in diethyl ether in the presence of triethylamine for combining the liberated hydrogen chloride. This reaction, as well as all other operations

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FRIDLAND, S. V., et al., Izvestiya Vysshikh Uchebnykh Zavedeniy, Khimiya i Khimicheskaya Tekhnologiya, vol. 13, no. 12, 70, pp 1760-1761



for separating esters, were conducted in an inert gas atmosphere. The separated esters, including their properties, are listed in a table in the original article.

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USSR

UDC: 632.95

TSIVUNIN, V. S., KRUTSKIY, L. N., and KAMAY, G. Kh., Kazan' Chemical-Technological Institute im. S. M. Kirov

"A Method for Preparing Alkylalkoxyalkylphosphinic Acid Esters"

USSR Author's Certificate No 258307, filed 16 Dec 68, published 28 Apr 70
(from RZh-Khimiya, No 22, 25 Nov 70, Abstract No 22 N639 P by T. Ya. Ogibina)

Translation: A method is suggested for preparing physiologically active ethyl-ethoxymethylphosphinic acid esters (I). A mixture of 0.12 mole of diethylamide chloride of ethylphosphonous acid and 0.12 mole of chloromethylmethyl ether is heated to 50 to 60° for 7 hours and then decomposed with a weak current of SO₂. 100 ml of ether is added, HCl (gas) passed through, and after about 16 hours 11.6 g of the acid chloride of I (II) removed, C₅H₁₂ClO₂P, boiling point 91-93°, n_D²⁰ 1.14642, d₄²⁰ 1.1513. 0.1 mole of MeOH is added to a solution of 0.053 mole of II in 40 ml of C₆H₆ at 20°. The mixture is kept at about 20° for 20 min, producing 4.65 g of I ester, C₆H₁₅O₃P, boiling point 96-7°/3, n_D²⁰ 1.4385, d₄²⁰ 1.0524. I ethyl ester, C₇H₁₇O₃P, is prepared in a similar fashion, boiling point 92-3°/2, n_D²⁰ 1.4364, d₄²⁰ 1.0232.

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USSR

UDC: 547.242

CHERNOKAL'SKIY, B. D., GEL'FOND, A. S., and KAMAY, GIL'M, Kazan' Institute of Chemical Technology imeni S. M. Kirov

"Kinetics of the Reaction of Aryldialkylarsine Oxides with Butyl Iodide"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 1, Jan 70, pp 151-156

Abstract: Heating (p-substituted phenyl) diethylarsine oxides, where a nitro-group, bromine, or iodine are the substituents, with methyl, ethyl, or isopropyl iodides in acetone yielded a precipitate, after 24-30 hours, aryldiethyl (aryldiethylhydroxyarsoxy) arsonium iodides (I), which crystallized in 25-69% yields. A similar reaction of (p-dimethylaminophenyl) diethylarsine oxide (II) with isopropyl iodide gave a different product, (p-dimethylaminophenyl) diethylhydroxyarsonium iodide in 64% yield. Reactions of phenyldiethylarsine oxide or its p-tolyl analog with alkyl iodides gave noncrystallizing syrups. Kinetic measurements, carried out at 50°, indicated second- and third-order kinetics.

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USSR

UDC:541.127 + 547.242 + 547.224

CHERNOKAL'SKIY, B. D., BAYRAMOV, R. B., and KAMAY, GIL'M, Kazan' Institute of Chemical Technology imeni S. M. Kirov

"Mechanism of the Reaction of Triphenylarsine Oxide with Butyl Iodide"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 1, Jan 70, pp 143-148

Abstract: A study was made of the mechanism of triphenyl- (triphenylhydroxyarsoxy) arsonium iodide (I) formation from triphenylarsine oxide and butyl iodide. The experimental electroconductivity data of the equimolar mixtures of reactants in acetone solution made it possible to conclude that the reaction proceeds in two steps. In the first (a) step triphenylbutoxyarsonium iodide (II) is reversibly formed. Subsequently II irreversibly reacts (b step) with an additional mole of triphenylarsonium oxide to form I. The fact that concentration of I in acetone at 50° remained constant during the six hours of passing 1-butene through the solution was seen as confirmation of irreversibility of step b of the reaction.

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USSR

UDC 542.91 + 547.297 + 547.558.2

USACHEVA, G. M., and KAMAY, G. KH. (Deceased), Institute of Organic and Physical Chemistry ~~imani A. Fe. Arbuzov~~, Acad. Sc. USSR

"Reaction of Acetyl Bromide With Triphenylarsine Oxide"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 1, Jan 71, pp 168-169

Abstract: The reaction of acetyl bromide with triphenylarsine oxide, taken in a 2:1 ratio, in toluene yields triphenylarsine bromide and acetic anhydride as well as unreacted starting materials. Triphenylarsine bromide is hydrolyzed easily to triphenylhydroxyarsine bromide. In the infrared triphenylarsine bromide exhibits absorption bands at 1003, 1027, 1076, 1458, and 1580 cm^{-1} .

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USSR

UDC 547.26'119

GIGAURI, R. D., KAMAY, G. Kh. (deceased), and UGULAVA, M. M., Kazan' Chemical Technological Institute imeni S. M. Kirov and Tbilisi State University

"Synthesis of Tri-sec-Alkyl Arsenites and Their Reactions With Acetic Anhydride"

Leningrad, Zhurnal Obshchey Khimii, Vol 41 (103), No 2, Feb 71, pp 336-337

Abstract: Tri-sec-alkyl arsenites are formed in good yields in the reaction of arsenic trioxide with corresponding alcohols, the water formed being removed azeotropically. A mixture of 25.4 g of arsenic trioxide, 100 g 4-octanol and 30 ml of octane was heated for 6-7 hrs in a flask equipped with a Dean-Stark trap yielding tri 4-octyl arsenite (I) after 6.2 g of water had been collected in the trap. Reaction of (I) with acetic anhydride gave dialkoxyarsinyl acetate.

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USSR

UDC 547.341

FRIDLAND, S. V., TSIVUNIN, V. S., FRIDLAND, D. V., KAMAY, G. KH. (DECEASED), Kazan' Chemical-Technological Institute imeni S. M. Kirov, Kazan, Ministry of Higher and Secondary Specialized Education RSFSR

"Reactions of α -Haloesters With Phosphorus Pentachloride"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 9, Sep 70, pp 1993-1995

Abstract: Reaction of α -chloroethylbutyl ether with PCl_5 is exothermic, leading to a white complex which upon treatment with SO_2 gives butoxyvinylphosphonic acid dichloride. When PCl_5 reacts with α -chloromethylalkylethers, no phosphorylated products are obtained: only chlorinated ethers. Reaction of α -chloroethylvinyl ether with PCl_5 yields 2-chloro-2-(1-chloroethoxy)-ethylphosphonic acid dichloride (I), which can be obtained, however, only when distillation of the product is carried out at 6 mm pressure or below; at higher temperatures hydrogen chloride is split off. One molecule of HCl is also split off upon treatment with one mole of

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FRIDLAND, S. V., et al, Zhurnal Obshchey Khimii, Vol 40, No 9,
Sep 70, pp 1993-1995

triethylamine. Chlorine atoms in (I) are quite labile and can easily be replaced by ethoxy groups when reacted with sodium ethoxide. V. KATAYEVA also participated in the experiments.

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USSR

UDC:547.242 + 546.19:546.221

CHERNOKAL'SKIY, B. D., LEVENSHTeyN, I. B., and KAMAY, G. Kh., Kazan' Institute of Chemical Technology imeni S. M. Kirov

"Products of the Reaction of Triphenylarsine Sulfide with Alkyl Halides"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 1, Jan 70, pp 148-151

Abstract: The mechanism of the title reactions was studied, because stability of the arsenic-aryl bond in pyrolytic processes is higher than that of the arsenic-alkyl bond. The main product of the reactions of triphenylarsine sulfide with methyl, ethyl, or propyl iodides was alkyltriphenylarsonium triiodide (I). Alkyltriphenylarsonium iodide crystals were also separated, along with I, but in lower yields from the reaction products with methyl and ethyl iodides. In one instance, 5% triphenylarsine was separated in the reaction with ethyl iodide. All alkyltriphenylarsonium iodides were obtained in crystal form. Triiodide I heated with mercury in acetone gave after several hours crystals of alkyltriphenylarsonium triiodomercurate (II) in 42-78% yields. Also, methyltriphenylarsonium tetraiodomercurate crystals were separated (yield 22.8%) from the reaction product, probably because of disproportionation of II during crystallization. Melting points of the above mercury compounds were determined.

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USSR

UDC 542.91 + 547.297 + 547.558.2

USACHEVA, G. M., KAMAY G. KH., Institute of Organic and Physical Chemistry imeni A. Ye. Aruzov, Academy of Sciences USSR

"Reaction of Acyl Chloride With Triphenylarsine Oxide"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 6, Jun 70, pp 1432-1433

Abstract: The reaction of acyl chloride with triphenylarsine oxide taken in a 2:1 ratio in anhydrous toluene yields triphenylarsine dichloride (I) and a mixture of acetic anhydride, toluene, and the starting acyl chloride. The structure of (I) was assigned on the basis of IR spectroscopic data and mixed melting point determination with independently synthesized (I). Also, (I) was hydrolyzed to triphenylarsinehydroxychloride (II) whose IR spectrum and melting point is identical with independently synthesized (II).

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USSR

UDC: 547.241

NURTDINOV, S. Kh., TSIVUNIN, V. S., KHAYRULLIN, R. S., KASHANOVA, V. G.,
and KANAY, G. Kh., Kazan' Institute of Chemical Technology

"Reaction of Ethyl- and Phenyldichlorophosphine with Acetone"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 1, Jan 70, pp 36-40

Abstract: Liquid heterocyclic compounds, 2-keto-2-ethyl-(or phenyl-)-3,3,5-trimethyl-1-oxa-2,4-phospholenes (I), were obtained in 67-70% yields by heating for 10-20 hours in a sealed tube mixtures of ethyl- or phenyldichlorophosphine with acetone at 75-80° or 100°, respectively. Physical constants of I are given. The structure of I was determined from IR and NMR spectra. Heating I with methanol at 70-150° in a sealed tube gave ethyl- or phenyl 1,1-dimethyl-3-ketobutylphosphinites (II) in 49-73% yields. All II compounds but one are liquids. Similarly heating I at 110° with water slightly acidified with hydrochloric acid gave 52-54% yields of ethyl- or phenyl-1,1-dimethyl-3-ketobutylphosphinic acids, crystalline solids with melting point 112-113° and 121°, respectively. The structures of the phenylketobutylphosphinic acid, I and II were determined from IR spectra.

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USSR

UDC 547.242+546.19:546.221

CHERNOKAL'SKIY, B. D., LEVENSHTeyN, I. B., and KAMAY, G. Kh., (deceased)
Kazan' Chemical-Technological Institute imeni S. M. Kirov

"Synthesis of Alkylthioarsonium Salts"

Leningrad, Zhurnal Obshchey Khimii, Vol 41 (103), No 3, Mar 71, pp 557-559

Abstract: Reactions of triethyl- and tripropylarsine sulfides with alkyl halides were studied at room temperature either in benzene or in an excess of the alkylating reagent. Reactions lasted from 5.5 hrs to several days, yielding trialkylalkylthioarsonium salts -- hygroscopic crystalline compounds soluble in acetone and methylene chloride but insoluble in ether and benzene. Above sulfides as well as the triphenylarsine sulfide react with trialkyloxoniumtetrafluoroborates forming alkylthioarsonium salts.

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USSR

UDC: 547.241

NURTDINOV, S. Kh., KHAYRULLIN, R. S., TSIVUNIN, V. S., ZYKOVA, T. V., NURTDINOV, G. Kh., KAMAY, G. Kh. (deceased), Kazan' Institute of Chemical Technology imeni S. M. Kirov

"On the Interaction of Chlorides of Trivalent Phosphorus With Saturated Ketones"

Leningrad, Zhurnal Obshchey Khimii, Vol 40 (102), No 11, Nov 70, pp 2377-2382

Abstract: The authors studied reactions of phosphorus trichloride, ethyldichlorophosphine and phenyldichlorophosphine with acetone, methylethylketone, acetophenone and methylbutylketone. It was found that all of these components react smoothly with heating to 90-170°C for 16-20 hours. The reaction products in most instances were purified by vacuum distillation, resulting in colorless liquids with a slight characteristic odor. In the case of acetophenone, the products were isolated by recrystallization from alcohols. Infrared and paramagnetic resonance spectroscopic studies were used to determine the reaction mechanism for chlorides of trivalent phosphorus with ketones. Some of the properties of the resultant cyclic oxaphospholenes are tabulated.

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USSR

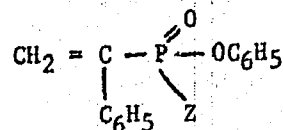
UDC 547.341.26.118.07

NURTDINOV, S. Kh., TSIVUNIN, V. S., NURTDINOV, G. Kh., and KAMAY, G. Kh.,
Kazan' Institute of Chemical Technology

"A Method of Making Derivatives of α -Phenylvinylphosphonic Acid"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki,
No 1, Jan 71, Author's Certificate No 289094, division C, filed 10 Nov 69,
published 8 Dec 70, p 77

Translation: This Author's Certificate introduces: 1. A method of making
derivatives of α -phenylvinylphosphonic acid of the general formula



where Z is Cl or $\text{C}_6\text{H}_5\text{O}$. As a distinguishing feature of the patent, phenyl-
dichlorophosphite or diphenylchlorophosphite is interacted with acetophenone
in the presence of heat in a closed system with subsequent isolation of the
goal product by conventional methods. 2. A modification of this method
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USSR

NURTDINOV, S. Kh., et al., Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 1, Jan 71, Author's Certificate No 289094, division C, filed 10 Nov 69, published 8 Dec 70, p 77

distinguished by the fact that heating is done to 150-170°C.

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1/2 033 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--REACTION OF N,N,DIETHYLETHYLPHOSPHONAMIDIC CHLORIDE WITH
CHLOROMETHYL ALKYL ETHERS -U- 2
AUTHOR--(03)-TSIVUNIN, V.S., KRUTSKIY, L.N., KAMAY, G.KH.
COUNTRY OF INFO--USSR
SOURCE--ZH. OBSHCH. KHIM. 1970, 40(3), 597-603 K
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ORGANIC PHOSPHORUS COMPOUND, AMINE DERIVATIVE, CHLORINATED
ORGANIC COMPOUND, ALIPHATIC ETHER, ACTIVATION ENERGY, ENTROPY, CHEMICAL
REACTION RATE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3002/1140 STEP NO--UR/0079/70/040/003/0597/0603
CIRC ACCESSION NO--AP0128564
UNCLASSIFIED

2/2 033

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0128564

ABSTRACT/EXTRACT--(U) GP-(~~SECRET~~) ABSTRACT. HEATING 26 G ETP(NET SUB2)CL WITH 12.4 G CLCH SUB2 OME 8 HR AT 60-70DEGREES GAVE AN ORANGE MASS, WHICH TREATED WITH SO SUB2 THEN HCL GAVE 55PERCENT MEOCH SUB2 P(O)ETCL (I), B SUB14 105-7DEGREES, N PRIME20 SUB3 1.4710, D PRIME20 1.2140. I AND MEOH MIXED AT 10DEGREES AND WARMED TO ROOM TEMP. FINALLY IN VACUO GAVE 51PERCENT MEOCH SUB2 P(O) (OME)ET 8 SUB14 115-16DEGREES, 1.4508, 1.1152. SIMILAR REACTION WITH ET SUB2 NH GAVE MEOCH SUB2 P(O) (NET SUBW)ET 70PERCENT, B SUB16 137-80, 1.4637, 1.0119. I (8 G) TREATED WITH 0.41 ML H SUB2 O IN ET SUB2 O WITH COOLING, THEN 1 HR AT 100-200DEGREES GAVE 55 PERCENT (MEOCH SUB2 P(O)ET) SUB2 O, B SUB1 155-6DEGREES, 1.4680, 1.1762. I AND H SUB2 O IN EXCESS GAVE MEOCH SUB2 P(O) (OH)ET, B SUB3 184-5DEGREES, 1.4558, 1.1639. SIMILARLY WERE PREPD. SHOWN ON MICROFICHE. THE RATE CONST. FOR REACTION OF ETP(NET SUB2)CL WITH BUOCH SUB2 CL AT 20DEGREES WAS DETD. BY CONDUCTOMETRIC STUDY TO BE 5.16 TIMES 10 PRIME NEGATIVE3 L. MOLE PRIME NEAGIVE1 MIN PRIME NEGATIVE1. THE ACTIVATION ENERGY OF THE REACTION WAS 10.8 KCAL-MOLE AND ACTIVATION ENTROPY OF MINUES 32.2 E.U. THE REDUCED RATE OF REACTION IN THIS CASE RELATIVE TO THAT OF ET SUB2 PCL IS ASCRIBED TO LOWERED NUCLEOPHILIC NATURE OF P WHEN ET IS REPLACED BY ET SUB2 N GROUP.

UNCLASSIFIED

USSR

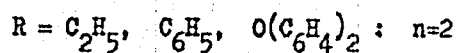
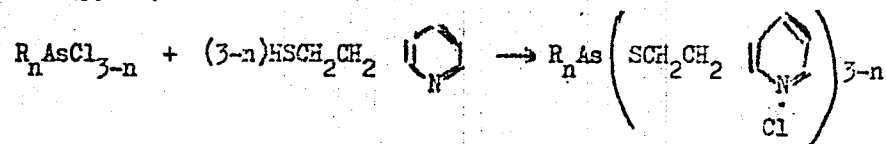
UDC 542.91+541.2+547.242

KAMAY, G. Kh., CHADAYEVA, N. A., MAMAKOV, K. A., Institute of Organic and Physical Chemistry in A. E. Arbuzov, Academy of Sciences USSR

"Synthesis and Properties of beta-(Pyridyl-2)-Ethyl Esters of Some Thioacids of Trivalent Arsenic."

Moscow, Izvestiya Akademiyi Nauk SSSR, Seriya Khimicheskaya, No 5, May 70, pp 1092-1096

Abstract: To produce thioesters of arsenious acid containing cyclic radicals the authors used 3 methods: 1. Reaction of chlorides of trivalent arsenic with beta-(pyridyl-2)-ethylmercaptan

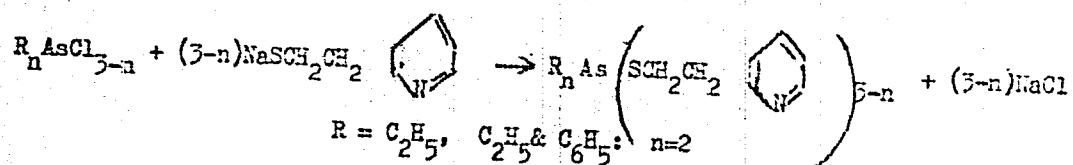


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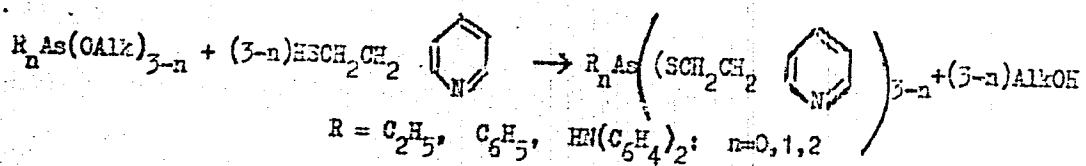
USSR

KAMAY, G. Kh., et al, Izvestiya Akademiyi Nauk SSSR, Seriya Khimicheskaya, No 5, May 70, pp 1092-1096

2. Reaction of chlorides of trivalent arsenic with sodium beta-(pyridyl-2)-ethylmercaptide



3. Reaction of alkyl esters of trivalent arsenious acids with beta-(pyridyl-2)-ethylmercaptan



2/2

Pesticides

USSR

UDC 542.91+547.297+546.14+547.242

USACHEVA, G. M., KAMAI, G. Kh. Institute of Organic and Physical Chemistry
imeni A. Ye. Arbutov, Academy of Sciences USSR

"Reaction of Tertiary Arsine Sulfides with Acid Halides. III. Reaction of
Phenyldiethylarsine Sulfide with Acetyl Bromide"

Leningrad, Zhurnal Obshchei Khimii, Vol 40, No 6, Jun 70, pp 1306-1310

Abstract: The reaction of acetyl bromide with phenyldiethylarsine sulfide at reagent ratios of 1:1 and 2:1 was studied. In the first case, the reaction proceeds rather vigorously at 20-25° and is completed after 16-17 hours. A mixture of thioanhydride of phenylethylarsinous and acetic acid, phenylethylbromoarsine, and ethyl diacetate was obtained. No pure ethyl bromide was detected. Composition of the mixture varies with different reaction times and temperatures. When the starting materials were used at a 2:1 ratio, the reaction takes place considerably more slowly at 20-25° and is completed after 240-250 hours. Distillation of the reaction mixture showed that ethyl bromide was present together with the mixed thioanhydride of phenylethylarsinous and acetic acids, as well as phenylethylbromoarsine.

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USSR

UDC 547.241

TSIVUNIN, V. S., KRUTSKII, L. N., KAMAI, G. Kh.

"Reaction of Diethylamide of Ethylphosphonous Acid Chloride with Acetyl Chloride and Benzoyl Chloride"

Leningrad, Zhurnal Obshchei Khimii, Vol 40, No 6, Jun 70, pp 1421-1422

Abstract: Diethylamide of ethylphosphonous acid chloride reacted with acetyl or benzoyl chloride to yield ethyldichlorophosphine and the diethylamide of the corresponding carboxylic acid. Whereas in the reaction with acetyl chloride some heat is evolved, no such effect was noted in the reaction with benzoyl chloride.

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1/2 020 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--BROMINATION OF SOME O-DERIVATIVES OF ALDOXIMES -U-
AUTHOR--(03)-KANAY, G.KH., NIKOLAYEVA, A.D., PEREKHOVKO, V.S.
COUNTRY OF INFO--USSR
SOURCE--IZV. VYSSH. UCHEB. ZAVED., KHIM. KHIM. TEKHNOL. 1970, 13(2), 225-9
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--BROMINATED ORGANIC COMPOUND, OXIME, MOLECULAR STRUCTURE, IR SPECTRUM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3005/0176 STEP NO--UR/0153/70/013/002/0225/0229
CIRC ACCESSION NO--AT0132453
UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE---27NOV70

CIRC ACCESSION NO--AT0132453

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ACID BROMIDE OF O-PROPYL BUTYROHYDROXAMATE, PRCBR-NOPR, (I) IS PREPD. IN 65PERCENT YIELD BY STIRRING 13.7 G PRCH:NOPR IN 50 ML CCL SUB4 WITH 17 G BR IN 20 ML CCL SUB4 UNTIL THE MIXT. IS DECOLORIZED. AFTER 8 HR, THE TWO PHASE MIXT. IS NEUTRALIZED WITH AQ. NAHCO SUB3, ANI, WORKED UP. THE FOLLOWING COMPOS. ARE SIMILARLY PREPD. IN 52-70PERCENT YIELD, WHERE R AND R PRIME1 IN THE FORMULA RCBR-NOR PRIME1 ARE: ME AND PHCH SUB2 (II), ET AND PR, ET AND BU, ET AND ISOAMYL, PR AND ET, AND PR AND PHCH SUB2. HYDROLYSIS OF II WITH 12PERCENT HCL BY BOILING FOR 2 HR., FOLLOWED BY WORK UP, WITH SATD. AQ. KOH GAVE PHCH SUB2 ONH SUB2. TREATMENT OF I WITH NADET-ETOH GIVES PRC(OET):NOPR IN 71PERCENT YIELD, D PRIME20 0.8941, N PRIME20 SUBD 1,4320. THE STRUCTURE IS CONFIRMED BY IR SPECTRA. FACILITY: KAZAN. KHIM.-TEKHNOL. INST. IM. KIROVA, KAZAN, USSR.

UNCLASSIFIED

USSR

UDC 539.194.536.27

YUNUSOV, T. K., LEONT'YEV, V. B., KAMAYEV, F. G., ASLANOV, KH. A., SADYKOV, A. S., Tashkent Order of the Red Banner of Labor State University imeni V. I. Lenin

"Conformational Conversions of Lupinin and Tropin Alkaloids During the Formation of N-Oxides"

Tashkent, Khimiya Prirodnikh Soyedineniy, No 4, 1972, pp 477-483

Abstract: Experiments were performed in which N-oxides of lupinin and tropin were obtained under light conditions by mixing the initial bases with 5% H_2O_2 at room temperature. Lupinin forms two isomeric N-oxides the separation of which is realized by solubility, and the individuality is checked by chromatography on a thin layer of Al_2O_3 (the benzene-ether-methanol system, 5:2:1).

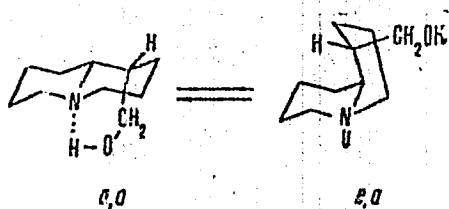
The infrared, mass and paramagnetic resonance spectral data indicate that the first isomer $N \rightarrow O$ of lupinin has trans-conformation with a, a $N \rightarrow O$, the axial- CH_2OH group with an intramolecular hydrogen bond between $> N \rightarrow O$ CH_2OH , and the second isomer, cis-conformation with a, e $N \rightarrow O$, axial CH_2OH

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USSR

YUNUSOV, T. K., et al., Khimiya Prirodnikh Soyedineniy, No 4, 1972, pp 477-483

and with an intramolecular hydrogen bond between $>N \rightarrow O$ and the CH_2OH fragments:



2/2

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Burn Studies

USSR

UDC 617-001.17-003.939.6

KAMAYEV, M. F., Prof., and ORLIK, V. A., Docent, Chair of Faculty Surgery,
Faculty of Pediatrics and Stomatology, L'vov Medical Institute L'vov

"Disturbances of Protein Metabolism in Patients With Burns"

Moscow, Klinicheskaya Meditsina, Vol 49, No 4, Apr 71, pp 83-88

Abstract: A study carried out on 45 patients with deep burns covering more than 10% of the body surface indicated that the protein metabolism of the patients was disturbed to a considerable extent.. This was manifested by a decrease in the total content of protein in the blood, development of dysproteinemia, and a raised elimination of total N_2 , amine N_2 , and tyrosine with the urine. The increased elimination of amine N_2 and tyrosine indicated that in addition to an increase in the decomposition of protein in the organism and decrease in its synthesis marked disturbances in the enzymatic oxidation of amino acids had taken place. The results showed that the amount of tyrosine eliminated could be used as one of the indices of deviations from normal of metabolic and enzymatic processes in the organism and also as a measure of the extent to which the therapeutic methods applied had been effective. Administration of synthetic hormones with anabolic action (USSR 1/2

USSR

KAMAYEV, M. F., Klinicheskaya Meditsina, Vol 49, Apr 71, pp 83-88

metandrostenolone and Hungarian nerobol) had a favorable effect on the protein metabolism of the patients.

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1/2 020 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--EFFECT OF THE SALT CONTENT IN WATER ON EVAPORATION IN SOLAR STILLS
-U-
AUTHOR--(03)-BAYBUTAYEV, K.B., ACHILOV, B.M., KAMAEVA, G.
COUNTRY OF INFO--USSR
SOURCE--GELIOTEKNIKA 1970, (2), 83-5
DATE PUBLISHED-----70
SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--SOLAR DISTILLATION, DISTILLATION EQUIPMENT, METAL CORROSION,
SEA WATER DESALTING, EVAPORATION, EVAPORATOR, WATER PURIFICATION,
SALINITY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3007/0460 STEP NO--UR/0377/70/000/002/0083/0085
CIRC ACCESSION NO--AP0135923
UNCLASSIFIED

2/2 020 UNCLASSIFIED PROCESSING DATE--04DEC70
CIRC ACCESSION NO--AP0135923
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. UNOILD. AND DILD. WATER SAMPLES
FROM VARIOUS LAKES WITH WIDELY VARYING CONTENT OF NA, K, MG, CA, SO SUB4
PRIME2 NEGATIVE, CL PRIME NEGATIVE, AND HCO SUB3 PRIME NEGATIVE WERE
TESTED. INCREASING SALINITY OF WATER CAUSED A SLIGHT DECREASE IN SOLAR
STILL PRODUCTIVITY, AN INCREASE IN CORRODING ABILITY OF WATER, BUT DID
NOT SHOW ANY EFFECT ON THE QUALITY OF DISTILLATE. FACILITY:
BUKHAR. GOSPEDINST., BUKHARA, USSR.

UNCLASSIFIED

1/2 011 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--USE OF THE METHOD OF CROSS SECTIONS TO STUDY THE TWO PHASE LIQUID
STATE IN CONDENSED FOUR COMPONENT SYSTEMS -U-
AUTHOR-(03)-MERTSLIN, R.V., KAMAEVSKAYA, L.A., NIKURASHINA, N.I.
COUNTRY OF INFO--USSR
SOURCE--ZH. FIZ. KHIM. 1970, 44(1), 79-82
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--PHASE EQUILIBRIUM, FLUID STATE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3005/0007 STEP NO--UR/0076/70/044/001/0079/0082
CIRC ACCESSION NO--AP0132307
UNCLASSIFIED

2/2 011 UNCLASSIFIED PROCESSING DATE--20NOV70
CIRC ACCESSION NO--APC132307
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A GENERAL GRAPHICAL METHOD FOR THE
DETN. OF THE COMPN. OF EQUIL. PHASES IS DESCRIBED. FACILITY:
SARATOV. GOS. UNIV. IM. CHERNYSHEVSKOGO, SARATOV, USSR.

UNCLASSIFIED

USSR

UDC 612.821

BEKHTEREVA, N. P., KAMBAROVA, D. K., and MATVEYEV, Yu. K., Division of Applied Neurophysiology, Institute of Experimental Medicine, Academy of Medical Sciences USSR, Leningrad

"Functional Characteristics of Links in Cerebral Systems for Control of Mental and Motor Functions in Man"

Leningrad, Fiziologicheskii Zhurnal SSSR imeni I. M. Sechenov, Vol 56, No 8, Aug 70, pp 1,081-1,097

Abstract: The impulse activity patterns in neuronal structures of the brain were studied during motor and psychological tests administered under ordinary conditions and after administration of neurotropic drugs. Areas of characteristic reproducible impulse patterns were discovered in various brain structures of patients with Parkinson's disease. Gold electrodes were used for the measurements, and the impulse activity was calculated by conventional means and by computer. To study the distribution of active neurons, the "specific activity" (i.e., the number of impulses per unit volume and unit time) was used. Comparison of impulse activity prior to and during the test and of the effects when the test was repeated made it possible to clearly define the activity and to refine the links of the systems of central control for various

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USSR

BEKHTEREVA, N. P., et al, Fiziolgicheskiy Zhurnal SSSR imeni I. M. Sechenov, Vol 56, No 8, Aug 70, pp 1,081-1.097

forms of activity. It was shown that during psychological tests the discharge frequency increased not only when the number of active neurons increased but also when it decreased. It is proposed that the phenomenon of lateral inhibition is of importance in the activity of neuron groups. When neurotropic drugs (deseril, L-DOPA) had been administered, the background frequency shifted as did the pattern of impulse activity during psychological and motor tests. A few links of the brain systems for mental and motor control could be more clearly defined by the "inclusion" or "exclusion" brought about by the neurotropic drugs.

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Immunology

USSR

UDC 616.981.718-078.7

KAMBARATOV, P. I., KUDELINA, R. I., and ARTISHCHEVA, L. I., Orenburg Medical Institute, Orenburg;; Institute of Epidemiology and Microbiology imeni Gamaleya, Academy of Medical Sciences USSR, Moscow; and Orenburg Oblast' Sanitary Epidemiological Station

"Use of a Soluble Rickettsia burneti Antigen as Allergen for the Diagnosis of Fresh Cases of Q-Fever in Man"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 4, Apr 71, pp17-18

Abstract: It was reported in a preceding paper that soluble antigen prepared according to Boivin from Rickettsia burneti, phase I, can be used for the retrospective diagnosis of Q-fever in human beings. In the present study this antigen in an amount of 0.1 ml was used in tests on 32 Q-fever patients on the 5th to 24th day of the disease. Beginning with the 5th day of the disease, an allergic reaction was observed upon intracutaneous application of the antigen, that generally reached a maximum 24 hrs after application and subsided within 48 hrs. The antigen did not cause allergic reactions in control patients with other diseases, nor did it cause formation of complement-fixing antibodies. The antigen can be recommended for the diagnosis of recent cases of Q-fever.

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1/2 017 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--INDIVIDUAL HYDROCARBON COMPOSITIONS OF THE BENZENE, TOLUENE, XYLENE
FRACTION OF LIGHT PYROLYSIS TAR -U-
AUTHOR-(03)-BOGDANOVA, T.A., KHALILOVA, SH.A., KAMBAROV, YU.G.
COUNTRY OF INFO--USSR
SOURCE--NEFTEPERERAB. NEFTEKHIM. (MOSCOW) 1970, (2), 28-9
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--HYDROCARBON, BENZENE, TOLUENE, XYLENE, KEROSENE, GAS OIL,
PETROLEUM FRACTION, STYRENE, PYROLYSIS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1997/0790 STEP NO--UR/0318/70/000/002/0028/0029
CIRC ACCESSION NO--AP0119697
UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0119697

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A MIXT. OF CRACKING KEROSENE AND STRAIGHT RUN GAS OIL WAS SUBJECTED TO PYROLYSIS AT 740DEGREES AND 3 SEC CONTACT TIME WITH 11PERCENT STEAM, GIVING 20PERCENT LIGHT TAR. THE LATTER YIELDED 38.08PERCENT FRACTION B. SMALLER THAN OR EQUAL TO 145DEGREES AND CONTG. C SUB6 H SUB6 37.12, PHME 32.05, KYLENES 11,26, PHET 3.39, STYRENE 1.31, AND 14,87 WT. PERCENT NONAROMATIC HYDROCARBONS. IN THE FRACTION, 68 COMPONENTS WERE DETD., 48 OF WHICH WERE IDENTIFIED.

UNCLASSIFIED

2/2 026

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AT0132926

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE INTENSIFICATION OF N CASE HARDENING (TO 1-5 MIN) WAS ACHIEVED BY HEATING SPECIMENS OF STEEL 20 BY MEANS OF A HIGH FREQUENCY CURRENT. A MIXT. OF NH SUB3 AND PROPANE BUTANE WAS USED. THE INSTALLATION OF A HIGH FREQUENCY HEATER ALLOWED SUBSEQUENT QUENCHING OF SPECIMENS IN WATER. THE NITROCEMENTATION WAS CARRIED OUT AT 900-1200DEGREES WITH HEATING RATES 50DEGREES-SEC, HOLDING SPECIMENS AT THE INDICATED TEMPS. FOR 0, 30, 150, AND 300 SEC. AFTER NITROCEMENTATION, SOME OF THE SPECIMENS WERE QUENCHED IN WATER FROM 900DEGREES AND THE OTHERS WERE COOLED SLOWLY IN A GAS STREAM. THE HIGHERST MICROHARDNESS AND DEPTH OF NITRIDED LAYER WAS PRODUCED WHEN THE GAS MIXT. CONTAINED NH SUB3 30PERCENT AND PROPANE BUTANE 70PERCENT. WHEN HOLDING SPECIMENS AT 1100-50DEGREES FOR 150-300 SEC THE DEPTH OF NITROCEMENTED ALYER WAS 0.35-0.55 MM, WHILE THE SAME DEPTH WITH CONVENTIONAL SLOW HEATING COULD BE PRODUCED ONLY AFTER 3-5 HR. EVEN WITHOUT ANY HOLDING PERIOD THE DEPTH OF NITROCEMENTED LAYER WAS 0.15-0.20 MM. OPTIMAL NITROCEMENTATION TEMP. WAS 1100DEGREES WITH HOLDING TIME 4-5 MIN WHEREBY A GOOD QUALITY LAYER WAS PRODUCED 0.3-0.5 MM DEEP WITH MICROHARDNESS 900-1000 DAN-MM PRIME2. FACILITY: MOSK. INST. STALI SPLAVOV, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 613.645

KAMCHATNOV, Y. P., and KALPINA, G. A., Medical Institute im. S. V. Kurashov,
Kazan

"Physiological and Hygienic Evaluation of Working Conditions of Persons Who Work
in Low-Intensity Light"

Moscow, Gigiyena Truda i Professional'nyye Zabolevaniya, No 9, Sep 70, pp 16-19

Abstract: Physiological tests were administered to 412 females working in a film processing plant under red, green, or yellow light of low intensity 25 w bulbs. Complex shifts were found in the central and autonomic nervous system which included marked increases in optical rheobase and chronaxy and lengthening of the latent period of visual and motor reactions during the course of the day. The EEG was characterized by an irregular alpha rhythm, frequently followed by more rapid low-amplitude oscillations, an indication of decreased reactivity of the cortical processes. The condition of the autonomic nervous system was judged from shifts in skin temperature and arterial pressure, both of which were much lower at the end of a work shift than at the beginning. The physiological data were supported by the results of a neurological examination which showed a large number of functional shifts. In general, the adverse effects were most pronounced in those who worked in soft red light. Yellow light was less irritating than green.

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USSR

UDC 534.232.46.8

KAMCHATNYK, YU. G., NOSOV, V. A. /In-t avtomatiki---Institute of
Automatics/

"Method of Excitation of Piezoelectric Radiator"

USSR Author's Certificate No 264829, filed 28 March 1968,
published 1 July 1970 (from RZh-Elektronika i yeye primeneniye,
No 2, February 1971, Abstract No 2A441P)

Translation: A new method is proposed for excitation of a piezoelectric radiator which makes it possible to increase the slope of the leading edge of an ultrasonic signal. This amounts to the fact that after the original excitation by a positive drop of the electrical voltage within an interval of time, equal to an odd number of half-cycles of the resonance oscillations of the radiator, the radiator once more quickly gives rise to a damped high-frequency electrical pulse with a negative first half-cycle, the amplitude of which exceeds the voltage drop and the duration is equal to a half-cycle of the resonance oscillations of the radiator. The principal circuit is presented of the excitation oscillator as well as an oscillogram of the form of the 1/1 signal at the piezoelement. 2 illustrations. N.B.

USSR

UDC 613.645

KAMCHATNOV, V. P., and ABDYUSHEV, SH. YA., Medical Institute imeni S. Kurashova, Kazan'

"Health and Hygiene Characteristics of Working Conditions and Some Biochemical Indices of Individuals Working in Darkness and Under Nonactinic Illumination"

Moscow, Gigiyena Truda i Professional'nyye Zabolevaniya, No 12, 1972, pp 47-48

Abstract: Metabolic changes in response to darkness and weak red light were studied among workers of a film processing shop following a normal work-day pattern and guinea pigs subjected to darkness all day (group 1), darkness for 6 hours during the day (group 2), and red light for 6 hours (group 3). Prolonged work in darkness caused an increase in cholinesterase activity (4.16 micromoles/ml/min vs. 2.77 in control) and blood bromine concentration (1.90 mg% vs. 0.56 in control). Group 2 animals demonstrated changes in redox processes and neuromuscular excitability, fluctuations in blood bromine level and cholinesterase activity, and an increase in hemoglobin and erythrocyte levels. For individuals working under red illumination, the coefficient of urine underoxidation, cholinesterase activity, and bromine level increased (respectively the levels were 6.49 vs. 1.63 in control, 4.21 micromoles/ml/min, and 1.14 mg%). A histochemical study of retinas from group 1 and 2

USSR

KAMCHATNOV, V. P. and ABDYUSHEV, SH. YA., Gigiyena Truda i Professional'nyye Zabolevaniya, No 12, 1972, pp 47-48

animals indicated a reduction of succinate dehydrogenase activity. It is concluded that all observed phenomena are results of central nervous system inhibitions expressed chiefly by changes in rheobase and chronaxie.

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USSR

UDC: 621.359.4

KAMCHUGOV, V. A., SVERDLOV, A. S.

"Highly Effective Air Filters"

Elektron. tekhnika. Nauch.-tekhn. sb. Tekhnol. i organiz. proiz-va (Electronic Technology. Scientific and Technical Collection. Technology and Organization of Production), 1970, vyp. 6(38), pp 93-97 (from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6V432)

Translation: Highly effective air filters are developed for cleaning the incoming air in enterprises of the radio electronic industry. The disadvantages of the existing typical cleaning system and the reasons for its unsatisfactory operation are considered. Data are given on filters, their design, filtering materials and economic effectiveness. A report is given on the results of experimental use. Resumé.

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USSR

UDC: None

VORONTSCV, V. A., GRUDNISTYY, V. V., KALEKO, V. F., KOSHELENKO, V. V., REZNICHENKO, Yu. T., and YASKEVICH, E. P.

"Device for Determining the Coordinates of an Aerodynamic Shadow Contour on Bodies of Complex Form in Free Molecular Flux"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 27, 1971, p 141, No (11)351113

Abstract: A parallel light beam is used to model the flux such that the model can be fixed in any position. For ease of adjustment, there is a manual indicator showing a thread tied to a movable carriage. The scale of this indicator is used to measure the coordinates of points difficult of access. A diagram of the device is shown.

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USSR

UDC: 8.74

KAMELETDINOV, N. B.

"Placement of Set of Job Programs for Interrelated Jobs in Machine Memory"

Prom. Kibernetika [Industrial Cybernetics--Collection of Works], Kiev, 1971, pp 126-130 (Translated from Referativnyy Zhurnal Kibernetika, No 11, 1972, Abstract No 11V571, by V. Ostrovskiy)

Translation: This work presents an algorithm for solution of the following problem: suppose a certain set of tasks $A=\{A_i\}$ and $P=\{P_i\}$ is the set of programs for performance of these tasks ($i=1, 2, \dots, n$). Program P_i has length l_i and can be run in time t_i by a computer with memory volume V . For interrelated tasks A_i and A_j , we fix z_{ij} , the number of memory locations set aside for the output data of the i th algorithm which are used as input data by the j th algorithm. With the condition $\sum_i l_i > V$, the problem is to divide P into the minimum number of subsets to

be simultaneously placed in main memory. This subdivision agrees with satisfactory accuracy to minimization of the time required to perform the entire set of tasks.

1/1

1/2 025 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--A THERMOBAROCAMERA FOR OPTICAL INVESTIGATIONS -U-
AUTHOR-(02)-KAMELIN, G.P., TUMANDV, V.A.
COUNTRY OF INFO--USSR K
SOURCE--LENINGRAD, OPTIKO MEKHANICHESKAYA PROMYSHLENNOST', NO 2, FEB 70,
PP 24-25
DATE PUBLISHED-----70

SUBJECT AREAS--METHODS AND EQUIPMENT
TOPIC TAGS--THERMOBAR CHAMBER, CAMERA, HEAT EFFECT

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1996/1588 STEP NO--UR/0237/70/000/002/0024/0025
CIRC ACCESSION NO--AP0118571
UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0118571
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. A BRIEF DESCRIPTION IS GIVEN OF
THE DESIGN OF A THERMOBAROCAMERA FOR INVESTIGATION OF THE DISARRANGEMENT
OF OPTICAL APPARATUS AT A PRESSURE UP TO 5 TIMES 10 PRIME NEGATIVE 6 MM
HG AND VARIABLE CONDITIONS OF HEAT EXCHANGE.

UNCLASSIFIED

Acc. Nr: **AP0047351**

Ref. Code: **UR0589**

PRIMARY SOURCE: Vestnik Khirurgii imeni I. I. Grekova, 1970,
Vol 104, Nr / , pp **61-65**

ACUTE GASTRODUODENAL ULCERS AND THEIR COMPLICATIONS

By V. P. Melnikova, V. I. Filin, M. G. Kamenchik and M. A. Samoylova

The work is based on the study of case reports of two recovered and 66 died patients in whom acute erosion and ulcer of the stomach and duodenum were revealed. In 33 patients there were multiple erosions and ulcers, in the remainder — single. Of 44 patients with complicated acute ulcers in 28 patients these were the principal cause of death, while in 14 patients they accelerated the inevitable fatal issue. Two patients have recovered one after gastrectomy and the other — after suturing mucosa around the bleeding ulcer and ligation of the left gastric artery.

REEL/FAME

19790877

1/2 026 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--ON LATENT PERIOD OF THE KNEE JERK IN PRE MATURELY BORN INFANTS -U-
AUTHOR--(02)-KAMENETSKAYA, A.G., SOLOMONOVA, Z.A.
COUNTRY OF INFO--USSR *K*
SOURCE--ZHURNAL EVOLYUTSIONNOY BIOKHIMII I FIZIOLOGII, 1970, VOL 6, NR 1,
PP 92-94
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--INFANT, REFLEX, BIOELECTRIC PHENOMENON, MUSCLE PHYSIOLOGY,
CENTRAL NERVOUS SYSTEM, BRAIN, BLOOD CIRCULATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3005/0376

STEP NO--UR/0385/70/006/001/0092/0094

CIRC ACCESSION NO--AP0132605

UNCLASSIFIED

2/2 026

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0132605

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. STUDIES HAVE BEEN MADE ON PRE MATURELY BORN INFANTS ON THE 1ST AND THE 7TH DAYS OF THEIR POSTNATAL LIFE. BIOELECTRICAL ACTIVITY WAS RECORDED IN M. QUADRICEPS OF THE THIGH. IT WAS DEMONSTRATED THAT THE INTERVAL BETWEEN STIMULATION AND THE ONSET OF THE ELECTRICAL RESPONSE OF MUSCLE DECREASES DURING THE DEVELOPMENT OF PRE MATURELY BORN INFANTS. HOWEVER THE DURATION OF THE LATENT PERIOD DEPENDS NOT ONLY ON MORPHOLOGICAL MATURATION OF VARIOUS PARTS OF THE REFLEX ARC BUT ON FUNCTIONAL CONDITION OF THE CENTRAL NERVOUS SYSTEM AS WELL (AS INDICATED BY STUDIES ON MATURELY BORN INFANTS WITH DISTURBANCES IN BRAIN BLOOD CIRCULATION. FACILITY: INSTITUTE OF EVOLUTIONARY PHYSIOLOGY AND BIOCHEMISTRY, USSR ACADEMY OF SCIENCES, LENINGRAD. FACILITY: INSTITUTE OF OBSTETRICS AND GYNECOLOGY, USSR ACADEMY OF MEDICAL SCIENCES, LENINGRAD.

UNCLASSIFIED

USSR

UDC 621.762.244

KAMENETSKAYA, N. M., ZOBOVA, O. A.

"A Method of Hermetically Sealing Microelements in Radio Equipment"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 2, Jan 71, Author's Certificate No 290490, division H, filed 10 Jun 69, published 22 Dec 70, p 169

Translation: This Author's Certificate introduces a method of hermetically sealing microelements in radio equipment by melting a sealant tablet. As a distinguishing feature of the patent, the method is designed for sealing articles of any configuration without using molds, and also for simplifying the technique. The sealing compound contains a mixture of thixotropic fillers, the element to be sealed is placed in a cup-shaped tablet of this sealing compound, the compound is premelted at points of contact with the element and leads at a temperature of 70-100°C, and the element is then pressed into the cup-shaped tablet, covered with a sealant tablet having lower thixotropic properties, and heat-treated at a temperature of 150±5°C for 10-15 hours.

1/1

USSR

UDC 616-008.6.02:615.246.9]-07:616.8-009.836

KAMENETSKAYA, O. N., Chair of Psychiatry, Kalinin Medical Institute

"Types of Sleep Disorders in Chronic Alcoholics in the Withdrawal Period"

Moscow, Zhurnal Nevropatologii i Psikhatrii, No 6, 1972, pp 893-897

Abstract: Study of 97 hospitalized chronic alcoholics age 21 to 55 in the withdrawal period revealed four types of sleep disorders: (a) sensorial, marked by dreams filled with many colors and sounds, frightful-looking animals, and fantastic situations, and considerable motor restlessness while falling asleep and awakening; (b) motor, with intense motor activity throughout the night, twitching muscles, frequent change of positions, talking in sleep; (c) reactive, little sleep during the night, realistic dreams, motor restlessness exhibited only during the first two days in the hospital; (d) vestibular, vestibulopathic phenomena in the form of vertigo with the sensation of falling or spinning of objects around the body accompanied by nausea, hidrosis, and fear, nightmares in which the body feels like lead. The caloric and other tests showed the presence of functional impairment of the vestibular apparatus, especially pronounced in the alcoholics with the vestibular type of dyssomnia.

1/1

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USSR

UDC 612.766.1

KAMENETSKAYA, Z. I., Chair of Normal Physiology, Sanitary Hygiene Medical Institute and Laboratory of Labor Physiology, Institute of Labor Hygiene and Occupational Diseases, Leningrad

"Changes in the Central Nervous System and Motor Apparatus During Intellectual and Physical Work"

Leningrad, Fiziologicheskii Zhurnal SSSR, No 10, 1971, pp 1,429-1,435

Abstract: Experiments with healthy young persons 19 to 25 years of age showed that brief mental activity (3 min) increased the lability of the visual analyzer and improved the quantity and quality of the work done in proofreading tests. More prolonged activity (33 min) resulted in a deterioration of these indexes. Brief mental activity also increased hand strength without causing tremors. Longer activity (7 and 33 min) had an adverse effect on these indexes. Physical exertion (work with an ergograph) for 36 sec, 1 min and 17 sec, and 2 min and 36 sec decreased muscular strength, the extent varying with the length of exertion, but it improved CNS function especially when continued for 2 min and 36 sec. Muscular exertion for 36 min had little effect. The results of correlation analysis revealed the existence of a definite relationship between the changes in parameters of the CNS and motor apparatus after both mental and physical work.

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- 29 -

USSR

UDC 612.8+612.76]-06:612.821

KAMENETSKAYA, Z. I., Sanitary-Hygiene Medical Institute and Institute of Labor Hygiene and Occupational Diseases, Leningrad

"Functional State of the Central Nervous System and Motor Apparatus in Some Types of Mental Work"

Moscow, Gigiyena Truda i Professional'nyye Zabolevaniya, No 7, 1971, pp 25-28

Abstract: CNS activity (latent period of visuomotor reactions, critical frequency of coalescence of light flashes, proof reading) and motor functions (hand strength, tolerance for static exertion, hand tremor) were studied in 20 bookkeepers and accounting clerks 22 to 50 years old 4 times a day (before work, before the lunch break, after it, at the end of the 8-hour workday) for a week (5 days). Both the indices showed clear signs of increasing fatigue by the end of the shift and end of the work week, those characterizing CNS activity being more pronounced. The deterioration was greatest 5 hours after the start of work and showed little improvement until the end of the shift. The motor changes were greatest at the end of the shift, with only the endurance of the hand muscles showing any significant improvement after the lunch break. Mental and physical
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USSR

KAMENETSKAYA, Z. I., Gigiyena Truda i Professional'nyye Zabolevaniya, No 7, 1971, pp 25-28

performance were best in midweek and poorest on Friday. The 2-day weekend proved beneficial, and both mental and physical indices were restored to their normal levels by Monday morning.

2/2

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USSR

UDC 532.517.2./4

KAMENETSKIY, A. I.

"Asymptotic Turbulent Boundary Layer at a Free Jet Boundary"

Trudy Leningradskogo Politekhnicheskogo Instituta, Aerotermodinamika
(Works of the Leningrad Polytechnical Institute, Aerothermodynamics),
No 313, 1970, pp 59-62

Translation: This paper contains a study of the possibility of using the semiempirical Taylor formula for an asymptotic boundary layer, and the conditions imposed on the law of increase in the mixing path are established for which it is possible to obtain the asymptotic solution. The solution found is compared with the experimental results. Here, in contrast to the existing Tolmin solution with a finite thickness of the boundary layer, entirely satisfactory comparison with experiment is achieved in the entire region of the boundary layer, including its outer boundaries. There is one illustration and a two-entry bibliography.

1/1

USSR

UDC 532.526

KAMENETSKIY, A. I.

"Asymptotic Turbulent Boundary Layer at the Edge of a Free Jet"

Tr. Leningr. politekhn. in-ta (Works of the Leningrad Polytechnical Institute), No 313, 1970, pp 59-62 (from RZh-Mekhanika, No 8, Aug 70, Abstract No 8B905)

Translation: The possibility is investigated of using the semi-empirical Taylor formula for the asymptotic boundary layer, and the conditions imposed on the law of mixture path growth, in the fulfillment of which the asymptotic solution can be obtained, are established. The obtained solution is compared with the experimental results; then, as distinct from the present Tollmin solution, with the finite thickness of the limiting layer, a completely satisfactory coincidence with experiment is obtained in the entire region of the boundary layer including its external bounds. Author's abstract.

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USSR

UDC 532.526

KAMENETSKIY, A. I.

"Empirical Method of Calculating the Turbulent Boundary Layer in an Incompressible Liquid"

Trudy Leningradskogo Politeknicheskogo Instituta, Aerotermodinamika
(Works of the Leningrad Polytechnical Institute, Aerothermodynamics),
No 313, 1970, pp 62-67

Translation: The investigated paper proposes a single-parametric method of calculating the turbulent boundary layer which is based on systematic processing of the existing experimental data. The law of similarity of the characteristic variables is established for turbulent and laminar boundary layers. The relations of the characteristic variables are presented in the form of graphs and approximating formulas. There are 5 illustrations and a 10-entry bibliography.

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USSR

UDC: 550.837

VAKUL'SKIY, A. A., KAMENETSKIY, F. M., LABZHINSKIY, S. I., LUTSYSHIN, A. S., MIZYUK, L. Ya., TIMOFEYEV, V. M., YAKUBOVSKIY, Yu. V., Institute of Physical Mechanics, Academy of Sciences of the Ukrainian SSR

"A Device for Aerogeoelectric Prospecting"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 9, Mar 72, Author's Certificate No 331356, Division G, filed 12 May 69, published 7 Mar 72, p 144

Translation: This Author's Certificate introduces a device for aerogeoelectric prospecting by the method of transient processes. The device consists of a current pulse generator which contains a source of direct current, a master multivibrator, a frequency divider, a power amplifier, a current commutator and an oscillator tank circuit; and a meter which contains a receiving tank circuit, a preamplifier, a gating module, an accumulator, a DC amplifier, a registration unit, and a circuit for control and synchronization of the gating module. As a distinguishing feature of the device, interference suppression is improved, the measurement error is reduced and the stability of compensation of transient processes caused by the conduc-

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USSR

VAKUL'SKIY, A. A. et al., USSR Author's Certificate No 331356

tive fuselage of the aircraft is increased by connecting coincidence gates in the current pulse generator between the frequency divider and power amplifier. Some inputs of the coincidence gates are connected to the output of the master multivibrator, and the other inputs are connected to the outputs of the frequency divider. A band filter is connected in the meter between the preamplifier and the gating module, and a secondary gating block is connected between the pulse amplifier and the DC amplifier. The secondary gating block is connected to the control and synchronization circuit, and is made in the form of parallel-connected compensation and measurement strobe pulse multivibrators which are connected through a broad strobe pulse shaping multivibrator to the primary gating module. Multivibrators for delay and shaping of narrow strobe pulses [are connected] to coincidence gates with some inputs connected to the outputs of the oscillator frequency divider, while the other inputs are connected to the multivibrator for shaping narrow strobe pulses, and the outputs of these coincidence gates are connected to the secondary gating block.

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USSR

UDC 550.837.73

KAMENETSKIY, F. M., YAKUBOVSKIY, YU. V., MIZYUK, L. YA., VAKUL'SKIY, A. A.,
TIMOFEYEV, V. M., MAKAGONOV, P. P., LUTSYSHIN, A. S., BOYKO, V. P.

"Device for Inductive Aeroelectric Exploration by the Transient Process Method"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 16,
8 May 70, p 61, Patent No 270123, Filed 19 Apr 65

Translation: 1. This Author's Certificate introduces a device for inductive
aeroelectric exploration by the transient process method. The device comprises
a pulse generator, a generator circuit, a receiving element, a control unit,
amplifiers, commutators, storage elements, and a recording unit. It is dis-
tinguished by the fact that in order to improve the noiseproofness of transient
process measurements in flight, the generator circuit is executed in the form
of a system made up of the basic generator circuit placed between the aircraft
and the receiving element at equal distances from both and two auxiliary cir-
cuits arranged one directly on the hull of the aircraft and the other, on the
case of the receiving element.

2. A second device like item 1 is introduced, but it is distinguished
by the fact that in order to obtain the required power in the basic generator
circuit directly from the low-voltage on-board network and also to increase
the steepness of the pulse fronts, the basic generator circuit is executed in

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KAMENETSKIY, F. M., et al., Otkrytiya, Izobreteniya. Promyshlennyye Obraztsy, Tovarnyye Znaki, No 16, 8 May 70, Patent No 270123, Filed 19 Apr 65

the form of several sections commuted by individual switches with a common control circuit.

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AA0052678-

KAMENETSKY G.I.

UR 0482

Soviet Inventions Illustrated, Section III Mechanical and General,
Derwent, 1-70

244047

SAFETY VALVE WITH TRANSFER SLIDE-VALVE

controlled by the difference of pressure

in a throttled aperture made in the slide-valve the fluid brought from the pressure cavity simultaneously to the annular belt and to the face of the slide valve, differing in having a conical surface between two cylindrical surfaces on the slide-valve, on which it is centred in the valve body. This speeds up the operation and improves reliability. When the pressure in cavity 13 is below the setting of ball valve 4, there is no flow of oil through throttling aperture 14, and the pressure in cavities 6, 11 and 13 is equal, so the oil pressure forces on slide-valve 2 are balanced but the slide-valve is pressed down by spring 3, and its conical surface 10 prevents oil passing from pressure cavity 6 to drain cavity 7. Surface 10 may be made in bush 15 pressed into body 1. If the pressure in the system is above the setting of

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AA0052678

Barsukov, A.A.: Kamenetskiy, G.I.: Eksperimental'nyy
Nauchno-Issledovatel'skiy Institut Metallorezhushchikh Stankov

valve 4, oil from cavity 6 begins to seep via channels 12 into cavity 11 and via aperture 14 into cavity 13, whence it will drain via valve 4 and channel 16 to drain cavity 7. The pressure in cavity 13 is lower than in cavities 6 and 11 as a result of loss of pressure in aperture 14. The pressure acting on slide-valve 2 from cavities 6 and 11 is greater than that from cavity 13. The slide-valve rises, allowing oil to drain.
22-12.62. 809893/25-8, BARSUKOV, A.A. and KAMENETSKII, G.I. Metal-Cutting Lathes Inst. (29.9.69) Bul. 17/14.5.69. Class 47g, Int. Cl. F 06k.

19821448

Acc. Nr: **AP0051903**

Ref. Code: **UR0475**

PRIMARY SOURCE: **Vrachebnoye Delo**, 1970, Nr **2** , pp **26-28**

**EFFECT OF BENZOHExONIUM ON THE PHYSICAL AND CHEMICAL PROPERTIES
OF BILE IN HEALTHY PERSONS AND CHRONIC CHOLECYSTITIS PATIENTS**

S. I. Kamenetskiy, and **N. N. Chernomorets** (Donetsk)

The effect of benzohexonium was studied on the physical properties and chemical content of bile in 114 patients with chronic cholecystitis and also in healthy subjects.

It was found that benzohexonium exerted no negative effect on the normal physical properties and chemical content of bile both in the healthy persons and patients with chronic cholecystitis. Benzohexonium exerted a positive effect on the pathologically changed hepatic and bladder bile.

111
REEL/FRAmE
19820386

24

2

Concrete

USSR

UDC 666.972.678

KAMENETSKIY, S. P., Candidate of Technical Sciences, MAYZEL', I. L., Candidate of Technical Sciences, and KALININ, V. I., Engineer, All-Union Scientific Research and Planning Institute Teploproyekt

"Heat-Insulating Plastic Concrete Based on Polyurethane Foam and Mineral Aggregates"

Moscow, Stroitel'nyye Materialy, No 7(223), Jul 73, pp 14-15

Abstract: The All-Union Scientific Research and Planning Institute Teploproyekt produces a heat-insulating plastic concrete based on FPU-3s polyurethane foam and ashy gravel on an foam glass fragments. The concrete has volumetric mass of 600 to 160 kg/m³. The ashy gravel is produced by the Kashirsk Reinforced Concrete Products Plant No 3; the foam glass, by the Gomel' Glass Factory; and the PPU-3s polyurethane, by the All-Union Scientific Research Institute of Synthetic Resins in Vladimir. It is demonstrated that polyurethane foam of various volumetric mass and various strength indices can be produced by changing the content of the foaming water agent. The materials possess low volumetric mass, sufficient strength, insignificant flammability, and good heat and moisture protective properties. Four figures, and one table.

1/1

1/2 012 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--FEATURES OF PRODUCTION TECHNOLOGY AND MECHANISM OF PORE FORMATION
IN LIGHT WEIGHT PERLITE Grog CERAMICS -U-
AUTHOR--(05)-FAIN, I.A., KAMENETSKIY, S.P., RABINOVICH, M.A., GRIGORYEV,
I.V., MINKOV, D.B.
COUNTRY OF INFO--USSR K
SOURCE--OGNEUPORY 1970, 35(2), 3-6
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--FOAM, REFRACTORY MATERIAL, INDUSTRIAL PRODUCTION, POROSITY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1992/1979 STEP NO--UR/0131/70/035/002/0003/0006
CIRC ACCESSION NO--AP0112943
UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0112943

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BLOATING PERLITE SAND IS
RECOMMENDED INSTEAD OF FOAM PERLITE. IT ENABLES PRODUCING 2.3-2.4 MORE
PRODUCTS. POROSITY OF BLOATING PERLITE IS 0.6-0.75 KG-CM PRIME2. TO
PROTECT THE STRUCTURE OF PERLITE A SPECIAL HORIZONTAL MIXER WAS USED.

UNCLASSIFIED

USSR

UDC 621.382.3:546.289

KUZNETSOV, YU.A., KAMENETSKIY, YU.A., SMUL'SKIY, A.S.

"Type GT-338 Germanium Avalanche Transistor"

Elektron. prom-st'. Nauch.-tekhn. sb. (Electronic Industry. Scientific-Technical Collection), 1971, No 4, pp 40-41 (from RZh:Elektronika i yeye primeneniye, No 5, May 1972, Abstract No 5B190)

Translation: The principles of operation of a Type GT-338 transistor are based on the effect of carrier multiplication in the region of the space charge of the collector. Use of the GT-338 in the circuits of generators of narrow pulses and of pulses with a steep front of the nano- and subnanosecond range makes it possible to simplify circuits substantially and to improve their technical characteristics. Summary.

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USSR

UDC 621.382.3.029.5/6

KAMENETSKIY, Yu. A., KAGANOVA, I. I.

"Equivalent Circuit of Silicon Microwave Transistors with the Side Capacitance of the Emitter Taken Into Account"

Elektron. tekhnika. Nauch.-tekhn. sb. Poluprovodn. pribory (Electronics Technology. Scientific-Technical Collection. Semiconductor Devices), 1970, issue 6(56), pp 16-26 (from RZh--Elektronika i yeye primeneniye, No 10, October 1971, Abstract No 10B195)

Translation: Using a Type 2T316 transistor as an example, the equivalent circuit is considered of a low-power silicon transistor operating in the microwave range. As the result of a theoretical analysis it is shown that with a decrease of the width of the base region necessary for increasing the critical frequency of transfer current, the effect of the side emitter capacitance increases in comparison with the depth of the emitter layer. As a result a significant dependence of the input resistance of the emitter on the operating frequency develops. The experimental studies conducted demonstrated the legitimacy of the assumptions made during computation. It is probable the results obtained are also correct for germanium transistors of this same class. 9 ill. 2 tab. 3 ref. V. B.

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USSR

UDC 621.314.58

TIKHMENEV, B. N., KAMENEV, A. V., GOMOLA, G. G.

"Thyristor Pulse Converter for Electrical Rolling Stock With Dual Feed"

Tr. VNII zh.-d. transp. (Works of the All-Union Scientific-Research Institute of Railroad Transportation), 1970, Issue 416, pp 137-163 (from RZh-Elektronika i yeye primeneniye, No 2, February 1971, Abstract No 2B560)

Translation: A description and analysis is presented of the operation of a thyristor pulse converter which can maintain normal operation of a-c electric rolling stock, powered from a d-c catenary net, by using the same equipment and by maintaining the same power and traction properties as with an a-c net. The results are presented of an experimental investigation with the d-c and a-c supplies. The converter described satisfies the requirement for dual supply and assures a number of advantages over existing design. 22 illustrations, 2 tables, 3 references. I.R.

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USSR

UDC: 8.74

KAMENEV, A. Ye.

"The ALGOL Packet of the SIMULA-1 Language"

V sb. Issled. po mat. ekon. i smezh. voпр. (Research in Mathematical Economics and Related Problems--collection of works), Moscow, Moscow University, 1971, pp 123-138 (from Elektronika, No 1, Jan 72, Abstract No 1V984)

Translation: The ALGOL packet of the SIMULA-1 Language is a set of procedures in ALGOL-60 language which imitate the possibilities of the SIMULA-1 language. The packet is designed for investigating systems with discrete events on computers equipped with translators from ALGOL-60 language.

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Acc. Nr.: AP0046777

Ref. Code: U/R 0113

USSR

UDC 629.113.075.001.5

PIRKOVSKIY, YU. V., RASTEGAYEV, L. G., and KAMENEV, V. D.

"Investigation of the Turn of a Two-Axle Motor Vehicle With Different Types of Drive for the Driving Wheels"

Moscow, Avtomobil'naya Promyshlennost' (Motor Vehicle Industry), No 1, 1970, pp 22-24

Translation: The relationships determining the change of power used in turning a motor vehicle with a 4x4 wheel formula depending on type of drive for the driving wheels are analyzed. Power change is associated with the presence of lateral forces causing tire drift and redistribution of torque along motor vehicle drive bridges. (2 illustrations, 6 biblio. ref.)

Reel/Frame
19730081

1/2 010 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--IMPROVED METHOD FOR PREPARING A CATALYST FOR THE VAPOR PHASE
SYNTHESIS OF VINYL CHLORIDE -U-
AUTHOR--(05)--PANFILOV, A.A., VASILYEVA, I.B., KAMENKO, B.L., GAVRILCHUK,
N.M., KVARTALNOV, V.V.
COUNTRY OF INFO--USSR
SOURCE--KHIM. PROM. (MOSCOW) 1970, 46(3), 177-9 K
DATE PUBLISHED--70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--CATALYTIC ORGANIC SYNTHESIS, VINYL CHLORIDE, MERCURY COMPOUND,
ACTIVATED CARBON, CHLORINATION, ACETYLENE, CATALYST ACTIVITY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--2000/1662 STEP NO--UR/0064/70/046/003/0177/0179
CIRC ACCESSION NO--AP0125284
UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125284

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ADSORPTION ISOTHERM OF HGCL SUB2 FROM AQ. SOLNS. ON ACTIVATED C IS PRACTICALLY LINEAR AND THE HGCL SUB2 CONC. ON THE C INCREASES FROM 0 TO 17PERCENT WHEN THE INITIAL HGCL SUB2 IN THE SOLN. IS INCREASED FROM 0 TO 5PERCENT (AT 20DEGREES); THE ADSORPTION IS FAIRLY RAPID AND A STEADY STATE IS ESTABLISHED AFTER SIMILAR TO 1 HR. A CATALYST CONTG. 10PERCENT HGCL SUB2 WAS PREPD. BY PASSING A 3PERCENT AQ. SOLN. OF HGCL SUB2 THROUGH A COLUMN PACKED WITH ACTIVATED C, AND DRYING THE PRODUCT IN CONTACT WITH AIR HEATED TO 120DEGREES. IN THE HYDROCHLORINATION OF C SUB2 H SUB2 AT A C SUB2 H SUB2:HCL VOL. RATIO OF 1:1.3 AND 180DEGREES THE ACTIVITY OF THE CATALYST INCREASED GRADUALLY WITH TIME AND THE MAX. ACTIVITY WAS REACHED AFTER 120 DAYS (AT A FLOW RATE OF 1100 VOLS.-HR); THE MAX. ACTIVITY WAS THEN SUSTAINED FOR UP TO 8 MONTHS, AND THE DEGREE OF CONVERSION OF C SUB2 H SUB2 UNDER THOSE CONDITIONS WAS NEARLY 80PERCENT.

UNCLASSIFIED

USSR

UDC 632.95

POLESHCHUK, V. D., LATYSHEV, V. I., KAMENNOV, N. A., DREMOVA, V. P., SMIRNOVA, S. N., STOLBOV, D. N.

"Repellent Activity of Diethylamide and Dibutylamide of Valeric Acid with Respect to Various Types of Ticks"

Sb. nauch. tr. Mosk. NII vaktsii i syvorotok (Collection of Scientific Works of Moscow Scientific Research Institute of Vaccines and Serums), No 22, 1972, pp 209-211 (from RZh-Khimiya, No 15, Aug 72, Abstract No 15N504)

Translation: According to field and laboratory tests, diethylamide and dibutylamide of valeric acid have high repellency with respect to the *Hyalomma plumbeum* tick which carries hemorrhagic Crimean fever. The tissue treated with these repellents calculated at 7 grams/m² remained repellent for 5 days. For *Alectrolobius tholorani* papillipes these materials were not repellent. The five-day repellency of tissue for *Ixodes persulcatus* ticks, *Dermacentor pictus* and *D. marginatus* was achieved from a dibutylamide dose of 55-65 g/m². The DETA had no repellency with respect to *N. p. plumbeum*, *A. th. papillipes* and *D. marginatus*, but tissue treated with DETA calculated at 40-50 g/m² remained repellent for 20 days for *I. persulcatus* and *D. pictus*.

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USSR

UDC 632.95

KAMENNOV, N. A., LURIK, B. B., LIKHACHEVA, V. F., Central Scientific Research
Institute of Disinfection

"A Method of Making Piperonylic Acid"

USSR Author's Certificate No 348556, filed 4 Jan 70, published 8 Sep 72
(from RZh-Khimiya, No 10, May 73, Abstract No 10N564P by T. A. Belyayeva)

Translation: In order to increase the yield of the goal product and simplify the technology of the process of synthesis, sodium hypochlorite is used as the oxidizer for making piperonylic acid by oxidizing piperonal. Example: A mixture of 0.2 mole of sodium hypochlorite and 40 ml of water is brought to a boil, 199 ml of 10-11% solution of NaOCl is added by drops over a 1.5-2 hour period, the reaction is continued until drops of the reaction mass fail to produce any color when applied to indicator paper impregnated with a 20% solution of potassium iodide, the mixture is cooled to a temperature of 20°C or less, filtered, acidified with concentrated hydrochloric acid, and piperonylic acid is separated by a Nutsch filter, washed with water, and dried at 110-120°C with a yield of 80-85%. The melting point of the acid is 225-7°C.

1/1

Pesticides

USSR

UDC: 632.95

KAMENNOV, N. A., PAVLOVA, S. P.

"Problem of Condensing Alpha-Terpinene With Maleic Anhydride by the Diels-Alder Reaction"

Tr. VNII Dezinfeitsii i steriliz. (Works of the All-Union Institute of Disinfection and Sterilization), 1971, vyp. 21, Vt. 2, pp 148-151 (from RZh-Khimiya, No 15, Aug 72, Abstract No 15N448)

Translation: Conditions are worked out for synthesizing 6-methyl 3-isopropyl 3,6-endoethylen- Δ^4 -tetrahydrophthalic acid anhydride (I), the initial product for synthesizing synergistic systems with pyrethrins, and the raw material for it -- α -terpinene (II). Compound II was synthesized from terpineol by dehydration with a 50% solution of H_2SO_4 while boiling the reaction mass with energetic agitation for 1 hour, with an 87% yield of the product (boiling point 171-3°C, n_D^{20} 1.4779). Compound I is synthesized by condensing compound II with maleic anhydride, heating equimolar quantities of the reagents to 90°C, waiting for the reaction to initiate, then bringing the temperature up to 220°C and agitating at this temperature for 4 hours. The product is distilled, the fraction with a boiling point of 180-200°C is saponified while boiling with 200 ml of a saturated solution of soda, the precipitate is filtered out and

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USSR

KAMENNOV, N. A. and PAVLOVA, S. P., Tr. VNII Dezinfektsii i steriliz., 1971, vyp. 21, Vt. 2, pp 148-151

washed with water to a neutral reaction, then dried over CaCl_2 , and compound I is produced with a yield of 65%, boiling point 62°C (heptane).

2/2

- 45 -

USSR.

UDC 615.285.7.015.21

LURIK, B. B., ~~KAMENNOV, N. A.~~, VOLKOV, YU. P., Central Scientific Research Institute of Desinfection, Ministry of Public Health, Moscow

"Study on Insecticide Synergists. Synthesis of Piperidides and Vinylogs of Piperonylic Acid"

Moscow, Khimiko-farmatsevticheskiy zhurnal, Vol 5, No 8, Aug 71, pp 15-17

Abstract: As part of the search for pyrethrin synergists, piperidide of piperonylic acid (III) and two of its vinylogs were synthesized. Compound III was prepared by the oxidation of piperonal (I) with sodium hypochlorite to piperonylic acid (II), and its conversion to the acid chloride, and reaction with piperidine. The Reformatsky reaction between I and ethyl bromoacetate yields B-(3,4-methylenedioxyphenyl)-B-hydroxypropionic acid ethyl ester (IV) which is dehydrated to B-(3,4-methylenedioxyphenyl)-acrylic acid ethyl ester (VI) and saponified to B-(3,4-methylene-1/2

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LURIK, B. B., et al, Khimiko-farmatsevticheskiy zhurnal, Vol 5,
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condensation of I with malonic acid with simultaneous decarboxylation. Acid V is converted to the acid chloride, and then to B-(3,4-methylenedioxyphenyl)-acrylic acid piperidide (VII). The Wittig reaction between B-(3,4-methylenedioxyphenyl)-acrolein and triphenylphosphonoacetylpipezidine is used to synthesize piperine (X). Piperidides III, VII and X synergize pyrethrins toward *Musca domestica* L.

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GVOZDEVA, I. V., LURIK, B. B., STARKOV, A. V., KAMENNOV, N. A., POGODINA, L. N., and SUKHOVA, M. N.

"Search for Synergists of Pyrethrins in the Methylene Dioxy Phenyl Series"

Tr. VNII dezinfeitsii i steriliz. (Works of the All-Union Scientific Research Institute of Disinfection and Sterilization), 1971, vyp. 21, t. 2, pp 101-106 (from RZh-Khimiya, No 18, Sep 72, Abstract No 18N431)

Translation: For purposes of studying synergistic activity, a series of piperonylic acid esters and amides, and piperonal acetals, were synthesized. The synergistic activity of the synthesized compounds was tested in a mixture with pyrethrins in a 10:1 ratio by the topical method. In tests on houseflies, the greatest synergistic activity was shown by butyl, nonyl and cyclohexyl esters and N,N-dipropyl amide. N,N-disubstituted amides are more active than N-substituted amides. Among the amides synthesized on the basis of heterocyclic amines, morpholide showed the greatest activity. The most toxic for red cockroaches were mixtures of pyrethrins with N-isopropyl amide and piperidide. Among the acetals, the most active compounds for houseflies were ethyl carbitolic and butyl carbitolic acetals of piperonal, and butyl and heptyl acetals. The acetals are weak synergists for red cockroaches. An investigation was made of the synergistic activity of the synthesized compounds on strains of houseflies highly resistant to DDT. T. A. Belyayeva.

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BELOKUROV, Yu. N., VODOLAZOV, Yu. A., KAMENNYI, A. N., POPOV, B. V., and KIRSANOV, B. N.

"Inhalation of Oxygen Under High Pressure for Tetanus"

Kazan', Kazanskiy Meditsinskiy Zhurnal, No 5, 1971, p 93

Abstract: A 46-year-old male received a prophylactic dose of tetanus antitoxin as well as tetanus toxoid for gunshot wounds in the neck and back, but his condition began to deteriorate sharply seven days after the injury and convulsions occurred with increasing frequency. When repeated injections of tetanus antitoxin, oxygen, analgesics, antihistamine, and desensitizing agents were ineffectual and the convulsions intensified, it was decided to institute hyperbaric oxygen therapy (1-1/2 hour exposure with O₂ pressure about 3 atm. The symptoms began to subside within 24 hours and respiration became easier. However, convulsions were provoked by the slightest movement and another session was carried out 24 hours later. The patient's condition showed steady improvement and convulsions became less frequent and confined to increasingly smaller areas. By the 15th day from the time of admission to the hospital, the clinical symptoms of tetanus disappeared completely.

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Therapy

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"Treatment of Anaerobic Infection with Hyperbaric Oxygenation"

Leningrad, Vestnik Khirurgii, Vol 105, No 10, Oct 70, pp 137-138

Translation: We have successfully used the method of hyperbaric oxygenation for the treatment of three patients with anaerobic infection of the extremities, spreading over the trunk.

In all three patients, the diagnosis was confirmed bacteriologically, and X-ray pictures showed gas in soft tissues. The treatment was conducted in a chamber designed by Yu. N. Belokurov. During the treatment sessions, the electrocardiogram, respiratory frequency, rheovasogram, and blood pO_2 of the patient were recorded. Each oxybarotherapeutic session lasted 2-3 hours, and the oxygen partial pressure was raised to a maximum of 2.8 atm. Each patient underwent from four to six of these treatment sessions.

We observed no complications from this treatment method. Detoxification therapy was simultaneously applied and consisted of administering antigangrene serum (up to 300,000 units per day), protein and electrolyte solutions, and

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antibiotics. Even after the second therapeutic session, a marked clinical effect was observed, with disappearance of signs of gas gangrene in two patients.

The method was successful even when radical surgery was impossible due to the spreading of the process over the trunk.

1. Patient Shch, 35 years old. Delivered to the hospital on 23 January 1968, 6 hours after trauma sustained at work. Diagnosis: Open fracture of the pelvis; rupture of the ampullar portion of the rectum and the urethra; tear wound on right buttock; and third-degree shock.

The patient was brought out of shock, a suprapubic fistula of the urinary bladder was made, and the wounds were treated surgically without sutures. Forty-four hours after the trauma, the patient's temperature was 40°C, a swelling of the right buttock developed with bronze-cyanotic discoloration of the skin, and the wounds discharged an exudate of dirt and blood. Palpation revealed crepitation in the area of the right buttock and the perineum. A diagnosis of gas and edematous form of anaerobic infection was made. Skin and fascia cuts were made in the buttock and perineum, and antigangrene serum up to 150,000 Au per day was administered. On 26 January, the edema and gas spread

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over the trunk, the wounds were necrotic, and the protruding muscles acquired a gray color. The patient was passive; pulse rate was 120 beats per minute. Sixty-eight hours after the beginning of the disease, the patient was sent to our clinic for oxybarotherapy. The first treatment was given on 26 January; it lasted 2.5 hours, with oxygen pressure in the chamber up to 2 atm. On 27 January, the patient's temperature was subfebrile, he was conscious, the hip swelling had diminished 4 cm, and the tissue around the wounds acquired a viable color. On the same day, the second oxybarotherapeutic treatment was given for 3 hours, with a pressure of 2.8 atm. After that, the bronze-cyanotic discoloration of the skin disappeared, the wounds exuded a moderate amount of a serous fluid, and the muscles became pink and were no longer protruding. The size of the right hip rapidly diminished to that of the healthy hip, and crepitation disappeared. The temperature was subfebrile, and the signs of gas gangrene were gone.

2. Patient R., 22 years old. On 8 March 1969, the patient sustained fourth-degree electrical burns on both wrists and forearms from 10,000 volt alternating current. On 13 March, he was delivered in serious condition to the Vologotskaya Oblast Hospital, where the following diagnosis was made:
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electrotrauma complicated by anaerobic infection spreading over the ventral surface of the neck and chest.

On 14 March, the patient was sent to our clinic in very serious condition, with a gray-earthy face color, icteric scleras, pulse of 120, and a temperature of 39.2°C. There are necrosis of both wrists and forearms up to the middle third. On the left side, the swelling and hyperemia spread to the lateral surface of the neck and over the subclavicular area. There was distinct crepitation to palpation. X-ray pictures revealed gas. Bacteriological analysis of the wound exudate established the presence of *C. perfringens* and hemolytic *Staphylococcus aureus*.

The patient was placed in the barochamber for four hours at a pressure of 2.5 atm. Within 24 hours, the patient's condition improved considerably, his temperature fell to subfebrile, swelling of the limbs diminished, and crepitation disappeared. On the following days, two more oxybarotherapeutic treatments were given. On 17 March, necrectomy was performed in the middle third of the left arm and the upper third of the right forearm. After surgery, the patient was again placed in the barochamber. On the following days, the patient improved rapidly. His temperature was subfebrile, and
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the stumps were gradually cleared of necrotic areas and pus and became covered with granulations and epithelization from the edges. The patient recovered and, on 20 April, was transferred to the Vologotskaya Oblast Hospital for further treatment.

3. Patient D., 38 years old. On 15 April 1969, the patient had an automobile accident and sustained an open fracture in the middle third of the right thigh and a laceration of the wall of the femoral artery. He was delivered to the district hospital in a state of shock. After the shock was treated, an osteosynthesis was performed on his right thigh, and his femoral artery was sutured. On the fifth day, the edematous and gaseous form of anaerobic infection developed in the thigh. Longitudinal cuts were made in the thigh, and the patient was sent to our clinic.

At admission on 20 April, he was in serious condition; his skin and scleras were icteric, his pulse was 100 beats per minute, his right thigh was edematous and the swelling was spreading over the shank, and the skin on the thigh had a bronze hue extending over the inguinal fold. A serous pus was discharging from the wound, and the muscles had a "cooked" color. Gas was emitted upon palpation and application of pressure. Bacteriological analysis
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of the wound content revealed the presence of *C. perfringens*.

On 20 and 21 April, two oxybarotherapeutic treatments were administered, each lasting 3 hours at a pressure of 2.8 atm. The patient's general condition improved, his temperature was subfebrile, and the clinical signs of gas gangrene disappeared. On 21 April there was a sudden massive hemorrhage from the wound. The patient's condition markedly deteriorated, and his pulse rose to 130 beats per minute. The hemorrhage was stopped by conventional methods. On 24 April, as a result of an ischemic gangrene of the extremity, the patient's leg was amputated at the level of the middle third of the thigh. After surgery the patient was given four more oxybarotherapeutic treatments which considerably improved his general condition. The patient recovered.

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